

Sahara's Secret: The Cat That Walks Alone

The Sahara desert, known for its extreme conditions, hides a fascinating secret: the sand cat. With adaptations that seem straight out of a sci-fi novel, these small felines conquer the desert's challenges, from finding food to avoiding detection.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- The Moroccan Saharan desert is one of the harshest, most punishing environments on earth — it's also home to a tiny wildcat with kittenish looks and the ability to travel astonishing distances
- The Saharan sand cat weighs in at no more than 6 pounds, and seems perfectly designed for life in the desert
- Lack of food (i.e., rodents) in the desert is likely the reason the tiny sand cats cover great distances in their enormous home range of at least 120 square miles for males, and at least 100 for females — it's a matter of survival
- The sand cats are notoriously difficult to track and study, which is why we know relatively little about them

Desert living isn't for everyone. The environment can be punishing.

"It's a quiet and cold night in the Moroccan Sahara, with temperatures dipping into the 40s," writes science journalist Sara Novak in an article for Discover Magazine. "This isn't the romantic image of the desert you might imagine — no mile-high dunes, soft sands or dromedaries traversing the landscape.

*Here, the desert is stony and flat with hard-packed gravel, dotted with periodic dry bushes and the occasional sheep herder. Far from any water sources, this part of the world may not see rain for several years."*¹

Believe it or not, the harsh landscape described above is home to a tiny, impossibly cute wildcat, the Saharan sand cat, a perpetually kittenish-looking creature about half the size of a house cat. These small felines have pale grey fur that serves as camouflage in the desert. They're resilient, able to travel impossible distances, are rarely aggressive or territorial, and generally get on well with other sand cats.

Scarcity of Prey Explains Enormous Home Range

In a tracking study published recently in the *Journal of Arid Environments*,² ecologist and sand cats expert Alexander Sliwa explains that the sand cat's home range, projected at 1,093 square miles, is probably an underestimation. The reason for this is scarcity of food — there are very few rodents (e.g., the jerboa and gerbil) in the desert for the cats to feed on, so they must travel great distances to survive. Their home range is so vast it's difficult for scientists to study, which is why we know so little about these small cats.

According to David Mallon, special advisor to the International Union for Conservation of Nature Species Survival Commission (IUCN SSC):

*"The charismatic little sand cat is well adapted to life in hot deserts and occurs in scattered populations from the Atlantic Sahara eastwards through Arabia to Iran and Central Asia. It is one of the least well-known felids, and this new radio tracking study marks a significant increase in our knowledge of its home range size and movements, information that is invaluable for planning conservation measures and as a basis for further research on its ecology."*³

That said, even equipped with tiny tracking devices, Saharan sand cats remain difficult to track because they travel so far. Once a cat is located, good luck finding that same little boy or girl again. To complicate things further, much of the land the cats roam is controlled by the Moroccan military, so researchers are confined to certain areas, and aren't allowed to use drones.

A revelation from the study was that there are probably fewer sand cats than originally thought. Chances are that in the past when the cats were counted, scientists were counting the same cat more than once because they had no idea how far the little felines traveled.

A Few Things We Know About This Elusive Little Wildcat

The sand cat species is classified as *Felis margarita*. There are only two recognized subspecies. One is *Felis margarita margarita*, the Saharan sand cat found in North Africa. The other is *Felis margarita thinobia*, aka the Turkestan sand cat, the Arabian sand cat, and the Pakistan sand cat. This subspecies is found in West and Central Asia and is larger in size than the Saharan sand cat.^{4,5} Some fun facts about these little cuties:⁶

- Despite their intense travel schedules, individual sand cats are nearly impossible to spot during daylight hours, and challenging to track at night
- Even with the extreme heat and drought in their native climate, they almost never drink water; they rely on the prey they eat for their hydration needs
- Their coats blend perfectly with sand and rock landscapes, and they have thick black fur between the toes that protects their paws from the burning sand
- They have large ears that swivel and send the sounds of the desert to a quite large middle ear cavity, allowing the cats to hear burrowing rodents scratching up to 600 feet away
- The cats' excellent hearing also helps them identify and avoid researchers with tiny radio collars who hope to study them!
- Since they weigh no more than 6 pounds, they can find shade from the scorching desert sun under small bushes or in underground burrows that also shield them from predators
- The cats who've been observed by scientists appear to be in good physical condition, with no obvious wounds or broken teeth, and only a few scars suggesting intra-species fights

Sources and References

^{1,3} [Discover Magazine, July 11, 2023](#)

² [Sliwa, A. et al. Journal of Arid Environments, Volume 210, March 2023, 104909](#)

⁴ [Cats for Africa, Sand Cat Distribution](#)

⁵ [Animalia, Felis Margarita Thinobia](#)

⁶ [Mongabay News, December 11, 2023](#)
